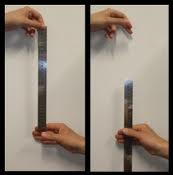
[](http://www.google.com/imgres?q=drop+ruler&um=1&hl=en&safe=active&sa=N&rls=com.microsoft:en-us&biw=1024&bih=571&tbm=isch&tbnid=UTxl7sXd3aUtqM:&imgrefurl=http://nrich.maths.org/7033&docid=xlYIGyy6UHCzhM&w=217&h=219&ei=dbdnTuWrLcbE0AGbpt3iCw&zoom=1)Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Period: \_\_\_\_\_\_\_

**Senses Lab: Ruler Catching**

**I. Experimental Question**

Which sense – sight, touch, or sound – will allow one to catch a ruler the fastest?

**II. Research**

**III. Hypothesis**

If \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

then\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**IV. Experiment**

**Procedure:**

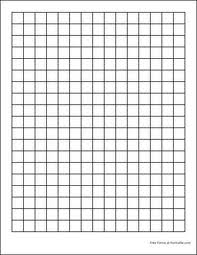
1. In partners decide who will drop the ruler (the dropper) and who will catch it (the catcher)
2. The dropper holds the ruler vertically at the 30 cm end of the ruler
3. The catcher puts his/her index finder by the 0 cm mark and his/her thumb on the other side of the ruler. The catcher should **not** be touching the ruler.
4. Once the dropper and catcher are in position follow the directions depending on the sense you are testing:
   1. Sight:
      1. The dropper should drop the ruler without saying or doing anything else to alert the catcher. The catcher should grab the ruler as soon as it is dropped.
      2. RECORD the number at which the ruler was caught in the table. Repeat 2 more times.
   2. Touch
      1. The catcher should close his/her eyes. The dropper should place his/her hand by the catcher’s shoulder. The dropper should tap the catcher’s should at the exact same time as he/she drops the ruler. The catcher should grab the ruler as soon as he/she feels the tap.
      2. RECORD the number at which the ruler was caught in the table. Repeat 2 more times.
   3. Sound
      1. The catcher should close his/her eyes. The dropper should place his/her hand by the catcher’s shoulder. The dropper should say “now” at the exact same time as he/she drops the ruler. The catcher should grab the ruler as soon as he/she hears “now”.
      2. RECORD the number at which the ruler was caught in the table. Repeat 2 more times.
5. Calculate the averages for each sense.
6. Graph the average length at which the ruler was caught for each sense. Be sure to **label** both of the graph axes!!!!!!

**Data:**

*Table 1:* Length (cm) at which ruler was caught for each sense

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Sight** | **Touch** | **Sound** |
| Trial 1 | cm | cm | cm |
| Trial 2 | cm | cm | cm |
| Trial 3 | cm | cm | cm |
| **Average** | cm | cm | cm |

*Graph 1:* Average length (cm) at which ruler was caught for each sense

[](http://www.google.com/imgres?q=graph+paper&um=1&hl=en&safe=active&sa=N&rls=com.microsoft:en-us&biw=1024&bih=571&tbm=isch&tbnid=MzPWeg0nwMkppM:&imgrefurl=http://www.formville.com/F229_Graph-Paper-2-Squares-per-Inch-Heavy-Black.html&docid=7qxzb7kYtLqRYM&w=408&h=527&ei=xrRnTsSGCNH3gAf_7MHdDA&zoom=1)

**V. Analysis**

1. Which sense had the fastest reaction time? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_The slowest? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. Why did you perform three trials instead of just one?

**VI. Conclusion**

1. Do your observations/data support your hypothesis? EXPLAIN using evidence (your observations/data) to support your answer. Use complete sentences!
2. Identify any potential sources of error. (Nothing may appear to have gone “wrong” in your experiment but what could have happened? Did you follow the exact procedure every time? Did you always record where the ruler was caught in the same way?)